



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Confirmation No. 7668**
Mitsuaki OSHIMA et al. : Docket No. 2003_1117
Serial No. 10/635,468 : Group Art Unit 2634
Filed August 7, 2003 : Examiner A. Le
COMMUNICATION SYSTEM :

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents,
Washington, D.C.

THE COMMISSIONER IS AUTHORIZED
TO CHARGE ANY DEFICIENCY IN THE
FEES FOR THIS PAPER TO DEPOSIT
ACCOUNT NO. 23-0975

Sir:

Please amend the above-identified U.S. patent application as follows:

IN THE CLAIMS:

Please cancel claims 13-20 without prejudice or disclaimer to the subject matter therein.

Please add claims 21-28 as follows:

21. A signal transmission apparatus comprising:

- a modulator operable to modulate a carrier wave with an input signal to produce a modulated signal, and

- a transmitter operable to transmit the modulated signal,
said input signal containing a first data stream including g values of bit patterns and a second data stream, where g is an integer number, and

the modulated signal having symbols, each of which representing one of m signal points in a vector space diagram, where m is an integer number and the vector space diagram includes an I axis and a Q axis extending in directions perpendicular to each other,

said modulator operable to divide said m signal points into g signal point groups, assign the g values of the first data stream to the g signal point groups respectively, assign data of the second